

SUB 317

What is claimed is:

1. An intravascular catheter comprising an elongate shaft having a lumen extending therethrough, the shaft including an inner polymer layer, a reinforcement layer disposed about the inner layer and an outer polymer layer disposed about the reinforcement layer, the reinforcement layer comprising a tubular braid having a first helical member interwoven with a second helical member and an axial member disposed between the first helical member and the second helical member.
2. An intravascular catheter as in claim 1, wherein the axial member is movable relative to the inner and outer layers.
3. An intravascular catheter as in claim 1, wherein the inner and outer layers have respective inner and outer surfaces free of protrusions caused by the axial member.
4. An intravascular catheter as in claim 1, wherein the first and second helical members each comprise polymeric material.
5. An intravascular catheter as in claim 4, wherein the first and second helical members each comprise a plurality of monofilaments.
6. An intravascular catheter as in claim 1, wherein the axial member comprises a polymeric material.

7. An intravascular catheter as in claim 6, wherein the axial member comprises a plurality of polymeric monofilaments.

8. An intravascular catheter as in claim 7, wherein the monofilaments are held together statically.

9. An intravascular catheter as in claim 8, wherein the monofilaments comprise LCP.

10. An intravascular catheter as in claim 9, wherein the monofilaments are arranged side-by-side to collectively define a flat ribbon.

11. An intravascular catheter as in claim 1, wherein the first helical member comprises a metallic material and the second helical member comprises a polymeric material.

12. An intravascular catheter as in claim 11, wherein the metallic material comprises a highly radiopaque material.

13. An intravascular catheter comprising an elongate shaft having a reinforcement layer comprising a tubular braid having a first helical member interwoven with a second helical member and an axial member disposed between the first helical member and the second helical member.

14. An intravascular catheter as in claim 13, wherein the first helical member comprises a metallic material and the second helical member comprises a polymeric material.

15. An intravascular catheter as in claim 13, wherein the first and second helical members each comprise polymeric material.

16. An intravascular catheter as in claim 15, wherein the first and second members each comprise a plurality of monofilaments.

17. An intravascular catheter as in claim 13, wherein the axial member comprises a polymeric material.

18. An intravascular catheter as in claim 17, wherein the axial member comprises a plurality of polymeric monofilaments.

19. An intravascular catheter as in claim 18, wherein the monofilaments are held together statically.

20. An intravascular catheter as in claim 19, wherein the monofilaments comprise LCP.

21. An intravascular catheter as in claim 20, wherein the monofilaments are arranged side-by-side to collectively define a flat ribbon.

22. A method of making a portion of a shaft of an intravascular catheter, the method comprising the steps of:

braiding a first helical member and a second helical member about a carrier such that an axial member is disposed between the first and second helical members.

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